

patterning said electrode layer to form first and second gate electrodes onto said first and second active regions, respectively;

doping said first active region and said first gate electrode with an impurity of a second conductivity type which is opposite to said first conductivity type to form a first transistor driven at a first voltage level, said gate electrodes being doped at a first concentration; and

doping said second active region and said second gate electrode with an impurity of said second conductivity type to form a second transistor driven at a second voltage level lower than said first voltage level, said second gate electrode being doped at a second concentration higher than said first concentration.

10. (New) The method of claim 9, wherein said doping steps comprise implanting ions of an impurity in said first and second active regions and said first and second gate electrodes.

11. (New) The method of claim 9, wherein said lower concentration of impurities in said first gate electrode causes the creation of a depletion layer in said first gate electrode when a driving voltage is applied thereto.

12. (New) The method of claim 9, wherein said first active region and said first gate electrode are doped simultaneously.

13. (New) The method of claim 12, wherein said second active region and said second gate electrode are doped simultaneously.

14. (New) The method of claim 12, further including the step of forming a gate oxide under each of said gate electrodes.

15. (New) The method of claim 14, wherein both of said gate oxides are the same thickness.

8 ~~16~~. (New) The method of claim ~~15~~⁷, wherein both of said gate oxides have a shape wherein they are thicker at side edges of said gate electrodes than at the center thereof.

9 ~~17~~. (New) The method of claim ~~16~~⁸, further including oxidizing said side walls of said gate electrodes, said gate oxides under each of said gate electrodes being formed while said side walls are oxidized.

10 ~~18~~. (New) A method of manufacturing a semiconductor device comprising at least first and second MOS transistors, said method comprising:

providing a semiconductor substrate having at least first and second active regions of a first conductivity type;

forming a gate oxide layer having a first thickness onto at least said first and second active regions;

forming an electrode layer onto said gate oxide layer;

patterning said electrode layer to form first and second gate electrodes onto said first and second active regions, respectively;

→ oxidizing sidewalls of said first and second gate electrodes to form an oxide film under said gate electrodes, said oxide film being thicker at said side walls than at a center portion of said gate electrodes;

doping said first active region and said first gate electrode with an impurity of a second conductivity type which is opposite to said first conductivity type to form a first transistor driven at a first voltage level, said gate electrodes being doped at a first concentration; and

doping said second active region and said second gate electrode with an impurity of said second conductivity type to form a second transistor driven at a second voltage level lower than said first voltage level, said second gate